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09/670,028	09/26/2000	Sveinn Olafsson	JEK/BEU/OLAFSSON	4704

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EXAMINER	
PADGETT, MARIANNE L	
ART UNIT	PAPER NUMBER
1762	8

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/670028	Applicant(s) Olafsson
	Examiner M.L. Polzett	Group Art Unit 1762

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 2/6/03

☒ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-46 is/are pending in the application.

Of the above claim(s) 17-46 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-16 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Interview Summary, PTO-413

☐ Notice of Informal Patent Application, PTO-152

☒ Other Appendix - Websters excerpt p. 312

Office Action Summary

1. Applicant's election without traverse of group I, method claims 1-16 in Paper No. 7 is acknowledged.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (f) he did not himself invent the subject matter sought to be patented.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. In section 3 of applicant's 2/6/03 response, the statement that Sveinn Olafsson is both applicant and inventor in the PCT, while Mr. Kenney is soley an applicant is noted. However, there is no copy of the PCT publication (which is referenced on p. 3, lines 3-5), in the examiner's file, so this allegation cannot be verified. (The USPTO computer tracking system, gives no information on inventors for this PCT case, and never provides assignee information). Assuming the information supplied by applicant is correct, the rejection will be removed, however pending confirmation by a copy of the PCT publication, the rejection is maintained.

Claims 1-16 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. See section 9 of paper # 6, and the above qualification.

4. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one

skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicants have added limitations to claim 1 that define a single dimension of the termal spikes of shock waves as being zero to "on the order of ... several ~~terms~~ tens of micrometers" which could be a maximum of anywhere from about 20 μm to 99 μm. Then redefined the area as the same dimension squared, but no citation of where these limitations are taught in the original disclosure was found. The original claim 1, mixed linear units with area which did not make sense logically or mathematically, so while some arguments might have been made (but weren't) about how μm^2 are the proper units for area, it does not necessarily follow that the area is the square of the linear dimension, because no shape was defined. The examiner found no teachings requiring that surface area treated be square in shape, which would support the amendment. Therefore, enablement for this change was not found in the original specification, and appears to be New Matter. A supported explanation providing the necessity of the claimed range is needed to avoid being New Matter. If it can be shown not to be new matter, the body of the specification needs to support the claim language.

5. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See above concern about the claimed area range.

6. The 102 and 103 rejections over Güethner et al alone, or in view of Gallagher et al, or over Inoue (799) are overcome by the requirement of the medium employed being cryogenic.

7. Claims 1-3, 6 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Loenen as applied in section 14 of paper # 6.

Applicant's arguments that appear to allege that a cryogenically cooled environment is some how distinct from a "cryogenic medium" are not convincing, as they are essentially semantics arguments. The word "medium" does not require any particular state of matter, and the word "cryogenic" merely means "being or relating to very low temperatures" (Websters), which fits the description of Van Loenen cooling their environment with a cryogenic cooler. Therefore, applicants' limitation of "cryogenic medium" does not distinguish form this reference. Furthermore, applicant's description in the remarks of the tunneling current diging pits by Van Loenen's process, is entirely consistent with applicant's cryptic language of "thermal spikes or shockwaves", since when cryogenically cooled, all the cooled environment, etc., reads on the claimed medium, and the pits formed are of sizes claimed, and the energy supplied by the process to the surface being treated inherently produces thermal effect and/or shockwaves or there would be no pits formed.

8. Claims 5, 9-11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Loenen a applied in section 15 of paper # 6.

Also, while Van Loenen et al only discuss etching, i.e. pit formation, with their technique, applicant's claimed deposition and cleaning processes do not necessarily require use of the thermal spike or shockwave, just that they are part of the process in some unspecified way, so may be any cleaning or coating process done in conjunction with the process of Van Loenen, who is inscribing information by pit formation. It would have been obvious to one of ordinary skill in the art to employ cleaning procedures, as pit formation would have created debris, and debris on small scale products as contemplated by Van Loenen would have been expected to deteriorate the accuracy of produced information if allowed to contaminate the substrate, hence removal thereof by cleaning would have been obvious and expected. Also, in col. 3, lines 35-68, use of the process in integrated circuit manufacture is discussed, hence coatings must be

involved somewhere in the process, so depositions of times before and/or after pit formation would have been obvious in the process, inorder to use in the taught enduses.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Loenen as applied to claims 1-3, 5-6, 8 and 12 above, and further in view of Wallace as applied in section 16 of paper # 6.

10. Claims 7, 9-11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Loenen as applied to claims 1-3, 5-6, 8, 12 above, and further in view of Thompson (598), optionally considering Binnig et al, as applied in section 18 of paper # 6.

Relating to deposition under cryogenic conditions, which is included, but not necessitated by applicant's claims (as they don't explicitly say how the deposition is related to the claimed process of the independent claims), it is noted that electron current under cryogenic conditions as required in either the primary reference of Thompson et al may remove material from an object. In the case of Van Loenen, the removal is the object of the process, but in Thompson (598) the removal causes vaporization, which is employed to make materials, hence showing use in deposition. While Thompson is a technique on a different scale than Van Loenen, the concept of use of the removed/vaporized material from the electron currents being used in deposition or material formation would have been equally applicable, especially as how the deposition relates to the cryogenic material, substrate, etc., is not detailed.

Note further that calling a location or area a cell or subcell or other area defining language without giving any real structure or purpose, etc., to the language has no significant meaning to effect patenable differences.

11. Claim 4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The configuration used in claim 4 has now been clearly defined, and is perpendicular to the treatment directions that would be produced by Van Loenen et al, hence creating a different processing technique.

12. Applicant's arguments filed 2/6/03 and discussed above have been fully considered but they are not persuasive.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication should be directed to M L. Padgett at telephone number 703-308-2336 on M-F from about 8:30 am –4:30 pm; and FAX# 703-872-9311 (after final) or 305-6078 (informal).

M. L. Padgett/mn 04/25/03
April 28, 2003

MARIANNE PADGETT
PRIMARY EXAMINER

undertaken by Christian powers in the 11th, 12th, and 13th centuries to win the Holy Land from the Muslims 2 : a remedial enterprise undertaken with zeal and enthusiasm

²crusade *vi* **cru·sad·ed; cru·sad·ing** (1732) : to engage in a crusade — **cru·sad·er** *n*

cru·sa·do \krü-'säd-(,)ō\ *also* **cru·za·do** \-'zäd-(,)ō, -(,)ü\ *n, pl* **-does** *or* **-dos** [Pg *cruzado*, lit., marked with a cross] (1544) : an old gold or silver coin of Portugal having a cross on the reverse

cruse \'krüz, 'krüs\ *n* [ME; akin to OE *crūse* pitcher] (13c) : a small vessel (as a jar or pot) for holding a liquid (as water or oil)

¹crush \'krəsh\ *vb* [ME *crushen*, fr. MF *cruisir*, of Gmc origin; akin to MLG *krossen* to crush] *vt* (15c) 1 *a* : to squeeze or force by pressure so as to alter or destroy structure *b* : to squeeze together into a mass 2 : HUG, EMBRACE 3 : to reduce to particles by pounding or grinding 4 *a* : to suppress or overwhelm as if by pressure or weight *b* : to oppress or burden grievously *c* : to subdue completely 5 : CROWD, PUSH 6 *archaic* : DRINK ~ *vi* 1 *obs* : CRASH 2 : to become crushed 3 : to advance with or as if with crushing — **crush·able** \-ə-bəl\ *adj* — **crush·er** *n* — **crush·ing·ly** *adv*

²crush *n* (1599) 1 : an act of crushing 2 : the quantity of material crushed 3 : a crowding together esp. of many people 4 : an intense and usu. passing infatuation (have a ~ on someone); *also* : the object of infatuation *syn* see CROWD — **crush·proof** \-ˌprüf\ *adj*

crust \'krəst\ *n* [ME, fr. L *crusta*; akin to OE *hrūse* earth, Gk *krystallos* ice, crystal, L *crudus* raw — more at RAW] (14c) 1 : a the hardened exterior or surface part of bread *b* : a piece of this or of bread grown dry or hard 2 : the pastry cover of a pie 3 : a hard or brittle external coat or covering: as *a* : a hard surface layer (as of soil or snow) *b* : the outer part of a planet, moon, or asteroid composed essentially of crystalline rocks *c* : a deposit built up on the interior surface of a wine bottle during long aging *d* : an encrusting deposit of dried secretions or exudate; *esp* : SCAB 4 : GALL, NERVE — **crust** *vb* — **crust·al** \'krəs-tᵊl\ *adj* — **crust·less** \'krəs(t)-ləs\ *adj*

crus·ta·cea \krəs-'tā-sh(ē-)ə\ *n pl* [NL, group name, fr. neut. pl. of *crustaceus*] (1814) : arthropods that are crustaceans

crus·ta·cean \krəs-'tā-shən\ *n* (1835) : any of a large class (Crustacea) of mostly aquatic arthropods that have a chitinous or calcareous and chitinous exoskeleton, a pair of often much modified appendages on each segment, and two pairs of antennae and that include the lobsters, shrimps, crabs, wood lice, water fleas, and barnacles — **crustacean** *adj*

crus·ta·ceous \-shəs\ *adj* [NL *crustaceus*, fr. L *crusta* crust, shell] (1656) : of, relating to, having, or forming a crust or shell; *esp* : CRUSTOSE

crust·ifi·ca·tion \ˌkrəs-tə-fə-'kā-shən\ *n* (1893) : INCRUSTATION

crus·tose \'krəs-ˌtōs\ *adj* [L *crustosus* crusted, fr. *crusta*] (1879) : having a thin thallus adhering closely to the substratum of rock, bark, or soil (~ lichens) — compare FOLIOSE, FRUTICOSE

crusty \'krəs-tē\ *adj* **crust·i·er; -est** (15c) 1 : having or being a crust 2 : giving an effect of surly incivility in address or disposition *syn* see BLUFF — **crust·i·ly** \-tə-lē\ *adv* — **crust·i·ness** \-tē-nəs\ *n*

¹crutch \'krəch\ *n* [ME *crucche*, fr. OE *crycc*; akin to OHG *krucka* crutch, OE *cradol* cradle] (bef. 12c) 1 *a* : a support typically fitting under the armpit for use by the disabled in walking *b* : PROP, STAY 2 : a forked leg rest constituting the pommel of a sidesaddle 3 : the crotch of a human being or an animal 4 : a forked support

²crutch *vt* (1681) : to support on crutches : prop up

crux \'krəks, 'krüks\ *n, pl* **crux·es** *also* **cru·ces** \'krü-ˌsēz\ [L *cruc-, crux* cross, torture — more at RIDGE] (1718) 1 : a puzzling or difficult problem : an unsolved question 2 : an essential point requiring resolution or resolving an outcome (the ~ of the problem) 3 : a main or central feature (as of an argument)

cru·za·do \krü-'zäd-(,)ō, -(,)ü\ *n, pl* **-dos** [Pg] (1986) — see MONEY table

Cru·zan \krü-'zan\ *n* [(assumed) AmerSp *cruzano*, fr. *Santa Cruz* St. Croix] (1958) : a native or inhabitant of St. Croix — **Cruzan** *adj*

cru·zei·ro \krü-'zā(ə)r-(,)ō, -(,)ü\ *n, pl* **-ros** [Pg] (1927) : the former basic monetary unit of Brazil replaced in 1986 by the cruzado

crwth \'krüth\ *n* [W] (14c) : ³CROWD 1

¹cry \'krī\ *vb* **cried; cry·ing** [ME *crien*, fr. OF *crier*, fr. L *quiritare* to cry out for help (from a citizen), to scream, fr. *Quirit-, Quiris*, name for the Roman citizen] *vt* (13c) 1 : to utter loudly : SHOUT 2 *archaic* : BEG, BESEECH 3 : to proclaim publicly : ADVERTISE (~ their wares) ~ *vi* 1 : to call loudly : SHOUT 2 : to shed tears often noisily : WEEP, SOB 3 : to utter a characteristic sound or call 4 : to require or suggest strongly a remedy or disposition (a hundred things which ~ out for planning —Roger Burlingame) — **cry havoc** : to sound an alarm — **cry over spilled milk** : to express vain regrets for what cannot be recovered or undone — **cry wolf** : to give alarm unnecessarily

²cry *n, pl* **cries** (13c) 1 : an instance of crying: as *a* : an inarticulate utterance of distress, rage, or pain *b obs* : OUTCRY, CLAMOR 2 *a obs* : PROCLAMATION *b pl, Scot* : BANNS 3 : ENTREATY, APPEAL 4 : a loud shout 5 : WATCHWORD, SLOGAN 6 *a* : common report *b* : a general opinion 7 : the public voice raised in protest or approval 8 : a fit of weeping 9 : the characteristic sound or call of an animal 10 *a* : a pack of hounds *b* : PURSUIT — used in the phrase *in full cry* 11 : DISTANCE — usu. used in the phrase *a far cry*

cry- *or* **cryo-** *comb form* [G *kryo-*, fr. Gk, fr. *kryos*, — more at CRUST] : cold : freezing (*cry*anesthesia) (*cryo*gen)

cry·ba·by \'krī-ˌbā-bē\ *n* (1852) : one who cries or complains easily or often

cry down *vt* (1598) : DISPARAGE, DEPRECIATE

cry·ing \'krī-iŋ\ *adj* (1607) 1 : calling for notice (a ~ need) 2 : NOTORIOUS, HEINOUS (a ~ shame)

cryo·bi·ol·o·gy \ˌkrī-ō-bī-'ä-lə-jē\ *n* (1960) : the study of the effects of extremely low temperature on biological systems — **cryo·bi·o·log·i·cal** \-ˌbī-ə-'lāj-i-kəl\ *adj* — **cryo·bi·ol·o·gist** \-bī-'ä-lə-jəst\ *n*

cry off *vt* (1928) : to call off (as a bargain) ~ *vi, chiefly Brit* : to beg off

cryo·gen \'krī-ə-jən\ *n* (1875) : a substance for obtaining low temperatures : REFRIGERANT — called also *cryogenic*

cryo·gen·ic \ˌkrī-ə-'jen-ik\ *adj* (1896) 1 *a* : of or relating to the production of very low temperatures *b* : being or relating to very low temperatures 2 *a* : requiring or involving the use of a cryogenic temperature *b* : requiring cryogenic storage *c* : suitable for storage of a cryogenic substance — **cryo·gen·i·cal·ly** \-i-k(ə-)lē\ *adv*

cryo·gen·ics \-iks\ *n pl but sing in constr* (ca. 1934) : a branch of physics that deals with the production and effects of very low temperatures

cry·og·e·ny \krī-'äj-ə-nē\ *n* (1913) : CRYOGENICS

cryo·lite \'krī-ə-ˌlīt\ *n* [ISV] (1801) : a mineral Na_3AlF_6 consisting of sodium-aluminum fluoride found in Greenland usu. in white cleavable masses and used in making soda and aluminum

cry·on·ics \krī-'än-iks\ *n pl but usu sing in constr* [*cryo-* + *-onics* (as in *electronics*)] (1967) : the practice of freezing a dead diseased human in hopes of bringing him back to life at some future time when a cure for his disease has been developed — **cry·on·ic** \-ik\ *adj*

cryo·phil·ic \ˌkrī-ə-'fil-ik\ *adj* (1942) : thriving at low temperatures

cryo·probe \'krī-ə-ˌprōb\ *n* (1965) : a blunt chilled instrument used to freeze tissues in cryosurgery

cryo·pro·tec·tive \ˌkrī-ō-prə-'tek-tiv\ *adj* (1967) : serving to protect from freezing (an extracellular ~ agent) — **cryo·pro·tec·tant** \-'tek-tənt\ *n or adj*

cryo·scope \'krī-ə-ˌskōp\ *n* (1920) : an instrument for determining freezing points

cry·os·co·py \krī-'äs-kə-pē\ *n* [ISV] (ca. 1900) : the determination of the lowered freezing points produced in liquid by dissolved substances to determine molecular weights of solutes and various properties of solutions — **cryo·scop·ic** \ˌkrī-ə-'skäp-ik\ *adj*

cryo·stat \'krī-ə-ˌstat\ *n* [ISV] (1913) : an apparatus for maintaining a constant low temperature esp. below 0°C — **cryo·stat·ic** \ˌkrī-ə-'stat-ik\ *adj*

cryo·sur·gery \ˌkrī-ō-'sərj-(ə-)rē\ *n* (1962) : surgery in which the tissue to be dissected is frozen (as by the use of liquid nitrogen) — **cryo·sur·geon** \-'sər-jən\ *n* — **cryo·sur·gi·cal** \-ji-kəl\ *adj*

cryo·ther·a·py \-'ther-ə-pē\ *n* (1926) : the therapeutic use of cold

cryo·tron \'krī-ə-ˌträn\ *n* [*cryo-* + *-tron*] (1956) : a device performing some of the functions of an electron tube and utilizing the fact that a changing magnetic field can cause a superconductive element to oscillate between a state of low and high resistance

crypt \'kript\ *n* [L *crypta*, fr. Gk *kryptē*, fr. fem. of *kryptos* hidden, fr. *kryptein* to hide; akin to ON *hreysi* heap of stones, Lith *krauti* to pile up] (1789) 1 *a* : a chamber (as a vault) wholly or partly underground; *esp* : a vault under the main floor of a church *b* : a chamber in a mausoleum 2 *a* : an anatomical pit or depression *b* : a simple tubular gland

crypt- *or* **crypto-** *comb form* [NL, fr. Gk *kryptos*] 1 : hidden : covered (*crypto*genic) 2 : unavowed (*crypto*fascist) 3 : CRYPTOGRAPHIC (*crypto*system) (*crypto*security)

crypt·anal·y·sis \ˌkrip-tə-'nal-ə-səs\ *n* [*crypto*gram + *analysis*] (1923) : the solving of cryptograms or cryptographic systems 2 : the theory of solving cryptograms or cryptographic systems : the art of devising methods for this — called also *cryptanalytics* — **crypt·an·a·lyt·ic** \ˌkrip-ˌtan-ᵊl-'it-ik\ *adj* — **crypt·an·a·lyze** \krip-'tan-ᵊl-ˌīz\ *vt*

crypt·an·a·lyst \krip-'tan-ᵊl-əst\ *n* (1921) : a specialist in cryptanalysis

cryp·ta·rithm \'krip-tə-ˌrith-əm\ *n* [*crypt-* + *-arithm* (as in *logarithm*)] (1943) : an arithmetic problem in which letters have been substituted for numbers and which is solved by finding all possible pairings of digits with letters that produce a numerically correct answer

cryp·tic \'krip-tik\ *adj* [LL *crypticus*, fr. Gk *kryptikos*, fr. *kryptos*] (1630) 1 : SECRET, OCCULT 2 : intended to be obscure or mysterious (a ~ policy) 3 : serving to conceal (~ coloration in animals); *also* : exhibiting cryptic coloration (~ animals) 4 : UNRECOGNIZED (a ~ infection) 5 : employing cipher or code *syn* see OBSCURE — **cryp·ti·cal·ly** \-ti-k(ə-)lē\ *adv*

¹cryp·to \'krip-(ˌ)tō\ *n, pl* **cryptos** [*crypt-*] (1946) : one who adheres or belongs secretly to a party, sect, or other group

²crypto *adj* (1952) : CRYPTOGRAPHIC

cryp·to·coc·co·sis \ˌkrip-tə-(ˌ)kä-'kō-səs\ *n, pl* **-co·ses** \-(ˌ)sēz\ (1930) : an infectious disease that is caused by a fungus (*Cryptococcus neoformans*) and is characterized by the production of nodular lesions or abscesses in the lungs, subcutaneous tissues, joints, and esp. the brain and meninges

cryp·to·coc·cus \-'käk-əs\ *n, pl* **-coc·ci** \-'käk-ˌ(s)ī, -(ˌ)(s)ē\ [NL, genus name, fr. *crypt-* + *-coccus*] (ca. 1902) : any of a genus (*Cryptococcus*) of budding imperfect fungi that resemble yeasts and include a number of saprophytes and a few serious pathogens — **cryp·to·coc·cal** \-'käk-əl\ *adj*

cryp·to·crys·tal·line \ˌkrip-tō-'kris-tə-lən\ *adj* [ISV] (1862) : having a crystalline structure so fine that no distinct particles are recognizable under the microscope

cryp·to·gam \'krip-tə-ˌgam\ *n* [deriv. of Gk *kryptos* + *-gamia* -gamy] (1847) : a plant (as a fern, moss, alga, or fungus) reproducing by spores and not producing flowers or seed — **cryp·to·gam·ic** \ˌkrip-tə-'gam-ik\ *or* **cryp·tog·a·mous** \krip-'täg-ə-məs\ *adj*

cryp·to·gen·ic \ˌkrip-tə-'jen-ik\ *adj* (1908) : of obscure or unknown origin (a ~ disease)

cryp·to·gram \'krip-tə-ˌgram\ *n* [F *cryptogramme*, fr. *crypt-* + *-gramme* -gram] (1880) 1 : a communication in cipher or code 2 : a figure or representation having a hidden significance — **cryp·to·gram·mic** \ˌkrip-tə-'gram-ik\ *adj*

¹cryp·to·graph \'krip-tə-ˌgraf\ *n* (1849) 1 : CRYPTOGRAM 2 : a device for enciphering and deciphering

²cryptograph *vt* (ca. 1923) : ENCRYPT

cryp·tog·ra·pher \krip-'täg-rə-fər\ *n* (1641) : a specialist in cryptography: as *a* : a clerk who enciphers and deciphers messages *b* : one who devises cryptographic methods or systems *c* : CRYPTANALYST

cryp·to·graph·ic \ˌkrip-tə-'graf-ik\ *adj* (1824) : of, relating to, or used in cryptography — **cryp·to·graph·i·cal·ly** \-i-k(ə-)lē\ *adv*

cryp·tog·ra·phy \krip-'täg-rə-fē\ *n* [NL *cryptographia*, fr. *crypt-* + *-graphia* -graphy] (1658) 1 : secret writing 2 : the enciphering or deciphering of messages in secret code or cipher 3 : CRYPTANALYSIS

cryp·tol·o·gy \krip-'täl-ə-jē\ *n* (1645) : the scientific study of cryptography and cryptanalysis — **cryp·to·log·ic** \ˌkrip-tə-'läj-ik\ *or* **cryp·to·log·i·cal** \-i-kəl\ *adj* — **cryp·tol·o·gist** \krip-'täl-ə-jəst\ *n*

cryp·to·me·ria \ˌkrip-tə-'mir-ē-ə\ *n* [NL, genus name, fr. *crypt-* + Gk *meros* part — more at MERIT] (1841) : an evergreen tree (*Cryptomeria japonica*) of the pine family that is a valuable timber tree of Japan

crypt·or·chid \krip-'tór-kəd\ *n* [NL *cryptorchid-, cryptorchis*, fr. *crypt-* + *orchid-, orchis* testicle, fr. Gk *orchis* — more at ORCHIS] (1874) : one affected with cryptorchidism — **cryptorchid** *adj*

crypt·or·chi·dism \-kə-ˌdiz-əm\ *or* **crypt·or·chism** \-ˌkiz-əm\ *n* (ca. 1[illegible]) : a condition in which one or both testes fail to descend normally

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